

drafted the new rejection using the old rejection as a template, but forgot to remove Tanaka from the first paragraph. The Appellant, accordingly, respond as if only Fujioka is applied.)

Applicants respectfully request reconsideration and withdrawal of this rejection.

ARGUMENT: REJECTION OF CLAIM 5

The Examiner relies on Fujioka et al. for disclosing a range of surface resistivity in an electrostatic recording medium. The range in Fujioka et al. is stated to be, "most suitably,"  $10^6$  to  $10^{10}$  ohms (col. 1, lines 33 and 41, and col. 5, line 42).

Fujioka et al. discloses that the range of  $10^6$  to  $10^{10}$  ohms is associated with an amount of coating composition measuring "2 to 20 g/m<sup>2</sup>, preferably about 5 to about 15 g/m<sup>2</sup> by dry weight" (col. 5, line 43). However, the coating composition of Fujioka et al. is *not* the cationic resin which is claimed by Applicants.

Cationic resin is mentioned at col. 5, line 12 in Fujioka et al., but this cationic resin is only one possible component of the coating composition (Fujioka et al. says the resin is "usable" in the composition at col. 5, line 12). The most important ingredients of the coating composition of Fujioka et al. are zinc oxide powder and coloring agent (please note claim 1 of Fujioka et al.). Cationic resin is not even mentioned in any of the examples, and no percentage or amount of cationic resin is disclosed *anywhere* in the patent. The only disclosure concerning cationic resin is that it is usable and that various specific cationic resins are suggested (col. 5, lines 17-35).

Fujioka et al. does not disclose a cation equivalent measured by colloidal titration

method, nor does Fujioka et al. disclose a cation equivalent value measured in units of meq/g.

Fujioka et al. does not disclose any cation equivalent that is measured by colloidal titration method, as recited in claim 5 of the instant application.

(a.) **CATIONIC RESIN AMOUNT.** In the response to arguments (§ 5 on page 4), the Examiner asserts (pages 4-5), “Applicant does not claim an amount of cationic resin.” However, this is plainly incorrect because claim 1 recites “cationic resin ... in a dry adhering *amount* of 0.5-2.0 g/m<sup>2</sup> ... wherein the cationic resin has a cation equivalent of 3-8 meq/g as measured by colloidal titration method.”

As discussed above, Fujioka et al. only mentions cationic resin as a possible ingredient and gives no amount, much less any range of cationic resin; the reference is completely lacking disclosure relating to the *amount* of cationic resin, and mentions no units in which such an amount might be disclosed (e.g., meq/g). Furthermore, Fujioka et al. fails to disclose any measurement of cation equivalent by colloidal titration method.

**The Examiner Admits Lack of Disclosure But Asserts Inherent Obviousness.** The Examiner admits (pages 2-3), “Fujioka et al. is silent toward a cation equivalent.” The Examiner then states (page 3, line 3; see also page 5, line 13):

Fujioka's recording material would be expected to be the same as claimed, absent any evidence to the contrary.

The Examiner's assertion that the Applicants' subject matter is “expected,” presumably

by the person of ordinary skill in the art, is respectfully questioned. There is no legal basis for this statement—the person of ordinary skill “expects” nothing, deduces nothing, and knows nothing except what is suggested by the prior art. The Examiner brings forth absolutely no evidence for his assertion, contrary to MPEP § 2143 and the case law cited there (including *Graham v. John Deere*).

Furthermore, the Examiner's statement appears to shift the burden of proof to the Applicants requiring that they demonstrate *non-obviousness* with “evidence to the contrary.” This is respectfully submitted to be contrary to §MPEP 2142, which states, “The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.” The elements of a *prima facie* case are outlined in MPEP §2143, and include (1) showing suggestion or motivation to modify the reference (not provided); (2) showing that all claim limitations are in the prior art (not done); and (3) reasonable expectation of success (not discussed). Only *after* the Examiner makes a sufficient case, does the burden shift to Applicants.

**Weight of Measurement Method.** The Examiner maintains (page 3, line 1) that “as measured by colloidal titration” is a method limitation that deserves no patentable weight. Applicants respectfully submit that what is claimed is the cation equivalent, and “as measured by colloidal titration” modifies that feature. A measured numerical quantity depends on what it is measured with: for example, when a length is measured by an inch rule and again by a centimeter rule, the two measurements will differ by a factor of 2.54.

Here, in comparing the claims and the prior art, the units are the same (both meq/g). Even when the units are the same, a measurement can still depend on the measuring instrument used (because instruments are not perfect). Therefore “as measured by colloidal titration” should have been given weight by the Examiner.

Furthermore, even if the measurement method is ignored as the Examiner proposes, that would not *remove* the limitation of a cation equivalent of 3-8 meq/g from the claim; it could only *modify* that feature, at most.

**(b.) SURFACE RESISTIVITY RANGE.** Dependent claim 5 recites a narrower range of surface resistivity than base claim 1. The range of claim 5 and the range disclosed by the reference do not overlap, but instead abut (meet at a single point). The point where the surface resistivity ranges abut is  $10^{10}$  ohms.

There is a legal question as to whether the Applicants’ claimed ranges are anticipated: Does a disclosed range from A to B anticipate a claimed range from B to C? MPEP §2131.03 (Anticipation of Ranges) states, “When the prior art discloses a range which touches, overlaps or is within the claimed range, but no specific examples falling within the claimed range are disclosed, a case by case determination must be made as to anticipation.”

**Fujioka et al.** has no specific examples falling within the claimed ranges. Indeed, that would not be possible unless its examples were outside of the range it discloses.

Furthermore, all of the examples of surface resistivity in **Fujioka et al.** are far from the

abutment point; all are between  $2.9 \times 10^7$  ohms (col. 7, line 10) and  $5 \times 10^8$  ohms (col. 9, line 42). The highest exemplary value is twenty times less than the lowest point of the Applicants' claimed range.

Applicants have already argued on the basis of the lack of examples in the Amendment of September 4, 2004, at lines 11-14 on page 11. In the final rejection of October 31, 2003, the Examiner did not traverse the Applicants' argument on any basis of fact.

While the Examiner did not traverse on facts, the Examiner did argue that Fujioka et al. is "not limited to the examples," and quoted the boilerplate statement at col. 6, lines 9-11 to the effect that it is not limited by the examples. The boilerplate statement was probably directed only to avoiding limitation to its *claims*, and does not constitute any teaching that its disclosed *examples* are in any way unsatisfactory. As noted, all the examples are within the disclosed range, and Fujioka et al. states that surface resistivity range is "most suitably" within the disclosed range.

Furthermore, Fujioka et al. states that values outside the preferred range are *unworkable*: "a reduced image density will result at ...  $10^{11}$  ohms [this is the middle of the Applicants' range of claim 5], and little or no record will be reproduced at  $10^{12}$  ohms [near the upper end of the Applicants' claimed range]. Accordingly [Fujioka's paper has] a resistivity of  $10^6$  to  $10^{10}$  ohms" (col. 1, lines 33-41).

Thus, Fujioka et al. does *not* teach to move away from the examples into the Applicants' claimed range. Even if Fujioka et al. were not limited to its examples (for the record, this is

traversed), it is still limited to its disclosed range because all of the examples are inside the range and there is no teaching to go outside of the disclosed range. The Examiner's assertion that Fujioka et al. is not limited to its examples is respectfully submitted to be irrelevant, even if correct (not admitted).

**Sufficient Specificity.** MPEP §2131.03 further states that a legal test for anticipation is that the disclosure have "sufficient specificity" to anticipate a feature. However, the Examiner has not cited any *specific* example of teaching in the applied art in response to the Applicants' arguments. The rejection of October 31 in ¶ 4 (Response to Arguments), on pages 2-4 of the Office Action, cites only general teachings on this point.

**Three Types of Range Interaction.** In making a determination under MPEP §2131.03, the Examiner is solicited to consider that of the three relations of range mentioned by MPEP §2131.03 (touch, overlap, or occur within), the case of touching or abutting, as with claim 5, is the weakest of the three. Mathematically, ranges which abut share only one point, out of an infinity of points in either range: for practical purposes, they are disjoint. As discussed above, between claim 1 and the applied art there is only abutment of the claimed and prior-art ranges, and no overlap.

***Titanium Metals Corp. of America v. Banner.*** On page 6 the Examiner cites *Titanium Metals Corp. of America v. Banner* for teaching that "a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties."

The Examiner's reliance on *Titanium Metals* is misplaced on several bases:

(1) This case deals almost entirely with a rejection under §102 and the bulk of the case is entirely unrelated to claim ranges, or to rejections under §103<sup>1</sup>. Only in the final twenty lines of the case does the CAFC discuss the rejection of the single dependent claim 3 under §103. (Claim 3 recited 0.3% Mo and 0.8% Ni, while the prior art disclosed 0.25% Mo—0.75% Ni and 0.31% Mo—0.94% Ni.) The CAFC writes, “the proportions are so close that prima facie one skilled in the art would have expected them to have the same properties,” and concludes that claim 3 is obvious; the conclusion is made without any further analysis relating numerical closeness to obviousness *per se*, without any citation to previous case law, without mentioning the required elements of a prima facie case of obviousness, and without any further discussion at all, except to state that the Appellee produced no evidence against obviousness.

The last should be taken in context. The CAFC notes (col. 2 on page 774) that the Board had erroneously ignored the §103 rejection, and that on appeal the §103 rejection was being argued by neither the PTO nor the Appellee. However, the CAFC felt obliged to treat the §103 rejection (there is four times as much text on its decision to consider the §103 rejection as on the merits); and its action is based on an imaginary action by the Board (col. 1 on page 777).

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1. In *Titanium Metals* a lower court had mis-applied §102 by confusing novelty itself (an alloy composition) with a benefit of the subject matter recited in the claim (corrosion resistance), and overturned the Board of Appeals because the benefit was not mentioned by the prior art. The CAFC does not address the question of abutting claim ranges in discussing the §102 rejection. The CAFC writes (227 USPQ 778, bottom of first column), “The [prior art] shows a titanium base alloy containing 0.25% by weight Mo and 0.75% Ni and this is *squarely within* the [claimed] ranges ... there can be no doubt that claims 1 and 2 read on it” (emphasis added). The quoted language shows that the case involved anticipation by an example within the claimed range, not overlapping or abutting ranges.

(2) Both claim 3 and the prior art applied against claim 3 disclose examples, not ranges. Claim 3 recites single numbers, and the prior art data were taken from points on a graph (the amounts above were estimated from the graph points by an expert).

If ranges *are* inferred from claim 3, by the one-digit precision of “0.3” and “0.8” then the inferred ranges are 0.25-0.34 and 0.75-0.84, respectively (the CAFC discusses rounding in Note 4, col. 1 on page 777). These inferred ranges in claim 3 are *anticipated* by the prior art 0.25% Mo—0.75% Ni, and there is no question of overlapping or abutting ranges.

(3) The technology of *Titanium Metals* is different from that of the Appellants' claims and therefore the CAFC's premise, that similar properties should be expected, is not on point for this case.

In sum, *Titanium Metals* is not strong case law for a §103 rejection dealing with ranges.

(c.) **DENSITY RANGE.** Fujioka et al. discloses that its zinc-oxide-and-dye coating composition is applied in a density range from 2 to 20 g/m<sup>2</sup>, while the Applicants' cationic resin density range is 0.5-2.0 g/m<sup>2</sup>. Even if Fujioka et al. did disclose cationic resin, there would still be no range overlap. Furthermore, the examples<sup>2</sup> in Fujioka et al. are far from the abutment point, 2.0 g/m<sup>2</sup>.

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2. Fujioka's examples of density are 10 g/m<sup>2</sup> (col. 6, line 42 and col. 8, line 24); 5 g/m<sup>2</sup> (col. 8, line 21); and 15 g/m<sup>2</sup> with ten on one side, five on the other side (col. 8, lines 12-14). These values are all at least two and a half times as great as the Appellants' claimed range. Similarly, Fujioka teaches that coating composition is added “... *preferably* about 5 to about 15 g/m<sup>2</sup> by dry weight” (col. 5, line 44 of Fujioka; emphasis added).



(d.) “**INTENDED USE.**” the Examiner asserts (page 3, line 13) that “for ink jet and electrophotographic recording ” in the preamble of claim 1 carries no weight. The Examiner's assertion is challenged, because the weight of preamble features is decided on a case-by-case basis and a mere assertion has little probative value. As best understood, the Examiner makes this statement to weaken the Applicants’ arguments that relate to the uses of their paper, which in turn relate to the claim features recited in the body of claim 1. However, even if, *arguendo*, the preamble is given no weight (not admitted) , the Applicants’ paper *can* be used for ink jet and electrophotographic recording, and so the advantages remain; and therefore the relevance of the Applicants’ arguments also remains.

ARGUMENT: REJECTION OF CLAIM 1

Claim 1 differs from claim 5 in that the claimed surface resistivity range overlaps the range disclosed by **Fujioka et al.**, rather than abutting it as is the case with claim 5; the range of claim 1 extends down to  $1.0 \times 10^9$  ohms. As was noted above, the highest value of surface resistivity in the examples of **Fujioka et al.** is  $5 \times 10^8$  ohms (at col. 9, line 42), and that is only half of the Applicants’ lowest claimed value (i.e.,  $1.0 \times 10^9$  ohms). As with claim 5, there is no teaching to go beyond that example with the disclosed range. As was also noted above, **Fujioka et al.** states that values in the range of claim 1 are unworkable: “a reduced image density will result at ...  $10^{11}$  ohms, and little or no record will be reproduced at  $10^{12}$  ohms.”

Thus, the 35 USC §103(a) rejection should be withdrawn.

- ② Claim 3 stands rejected under 35 USC §103(a) as unpatentable over Fujioka et al. in view of U.S. Patent 4,207,142 to Shepherd (hereinafter "Shepherd").

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Claim 3 recites alkenyl succinic anhydride. As the Examiner points out, the secondary reference Shepherd discloses this at col. 2, line 40: "GB Pat. ... (equivalent to U.S. Pat. No. 3,102,064) discloses [substances] which include substituted succinic anhydrides ... as sizing agents." Shepherd shows a schematic chemical formula and states that one part of the formula (R') can include alkenyl. However, this disclosure describes Shepherd's prior art, not Shepherd's invention.

At column 6, lines 9-17, Shepherd states that "long-chain succinic anhydride derivatives," analogous to claim 3, is marketed under the trade name "Fibran." Shepherd then (col. 6, lines 18-34) discusses the disadvantages of Fibran and states (line 35), "An object of the present invention is ... sizing agents which have the desirable properties of existing products without the attendant disadvantages." In other words, Shepherd proposes other compounds in place of that claimed by the Applicants. Shepherd teaches away from the subject matter of claim 3.

A sizing agent is used to reduce absorption of liquid water, Fujioka et al. is concerned with electrostatic properties of paper and is little concerned with the effect of liquid water—wet paper is conductive, whether it gets wet slowly or quickly. Fujioka et al. is not seen to teach any

need for specific sizing agents, and the Examiner points out no teaching in Fujioka et al. toward combination.

Thus, the 35 USC §103(a) rejection should be withdrawn.


In view of the aforementioned remarks, claims 1 and 3-5 are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

ARMSTRONG, KRATZ, QUINTOS,  
HANSON & BROOKS, LLP

  
William L. Brooks  
Attorney for Applicant  
Reg. No. 34,129

WLB/mla  
Atty. Docket No. 000225  
Suite 1000  
1725 K Street, N.W.  
Washington, D.C. 20006  
(202) 659-2930



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Enclosures: Petition for Extension of Time